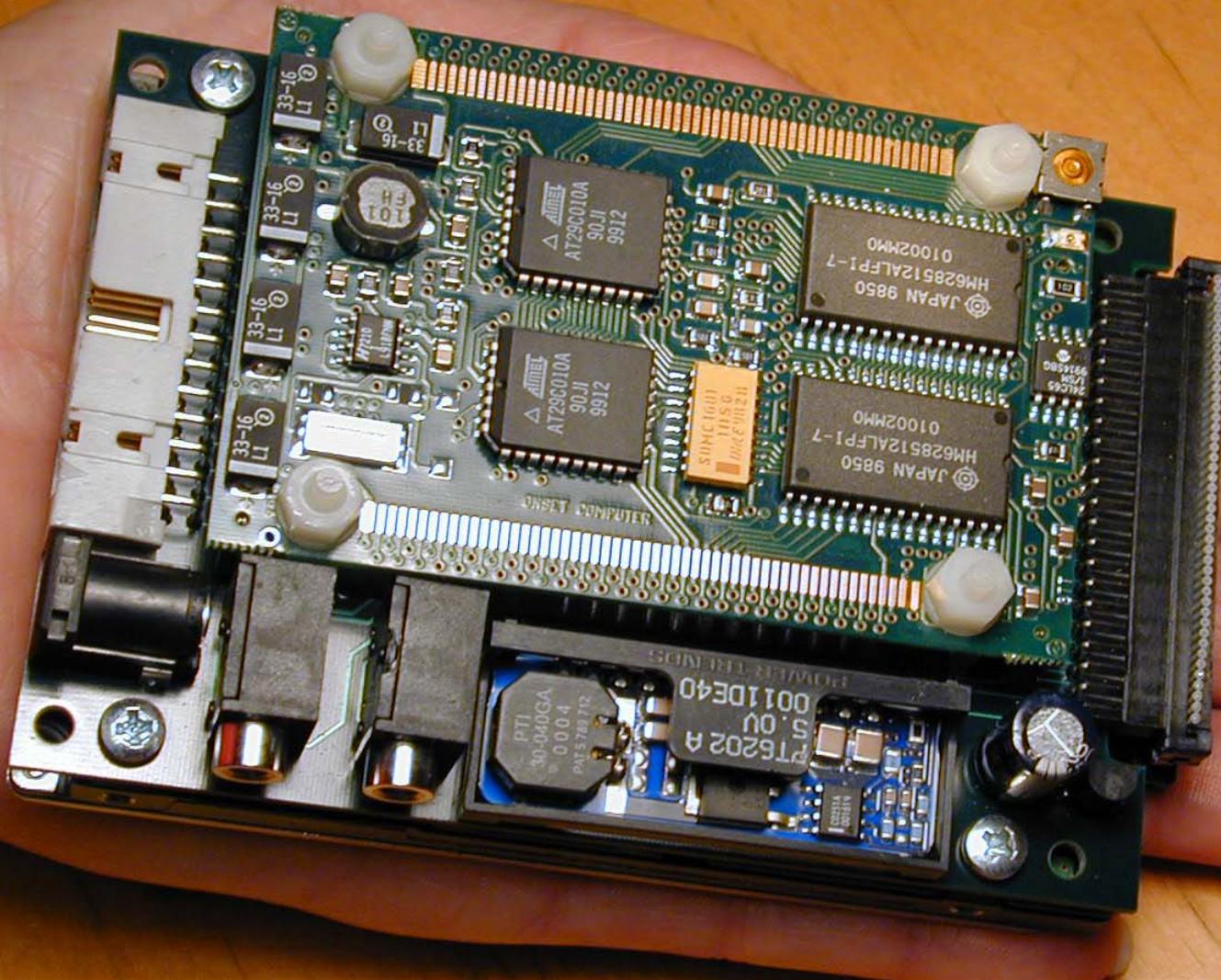


Approach

Right Whale Acoustic Detection Research

- Use Cape Cod Bay to validate reliability between acoustic monitoring, aerial survey and food availability results.
- Simultaneously deploy arrays of pop-ups in remote areas (working with fishermen) and compare acoustics with aerial survey and food availability results.
- Work closely with other scientists, agencies and concerned parties to find timely, responsible and feasible solutions to monitoring and mitigation needs.

Pop-up Data Storage Module

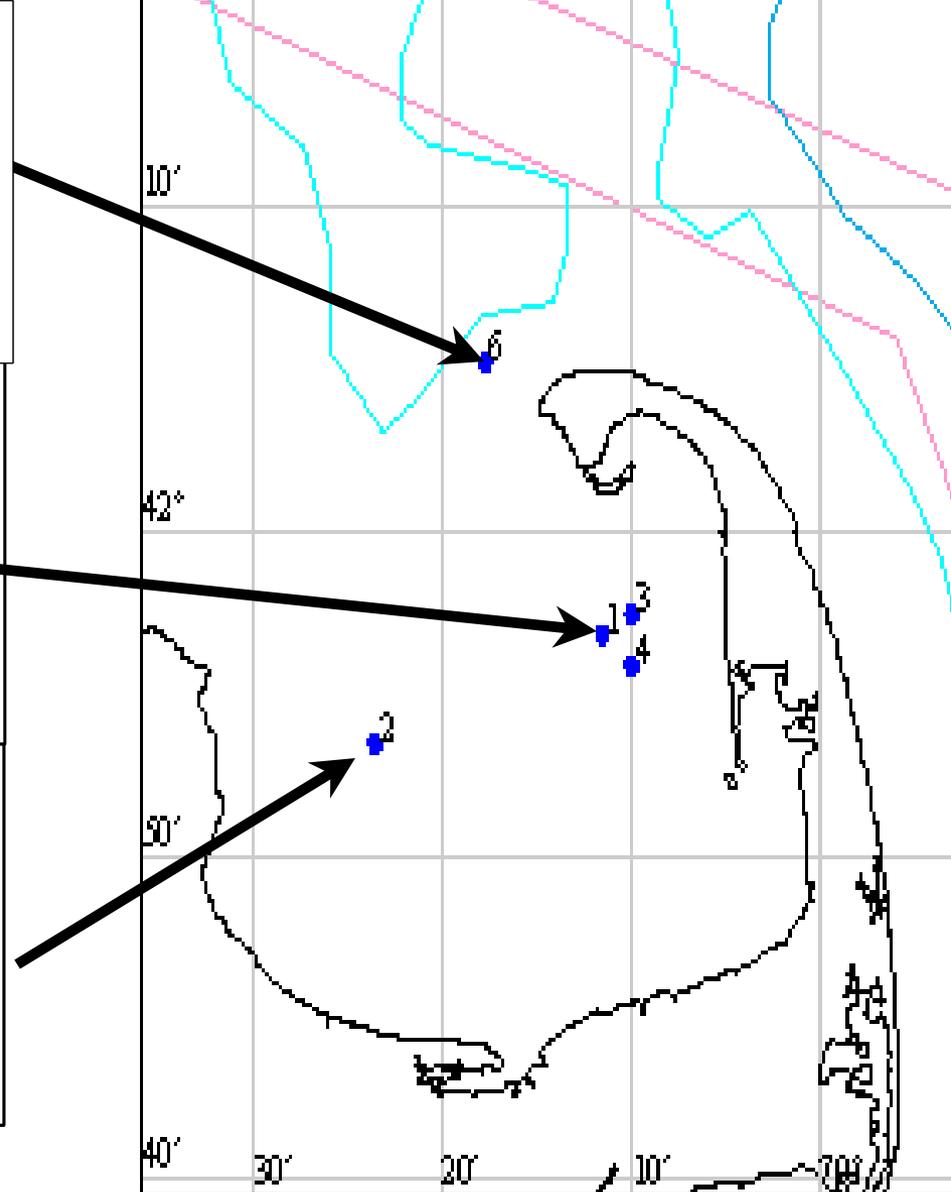
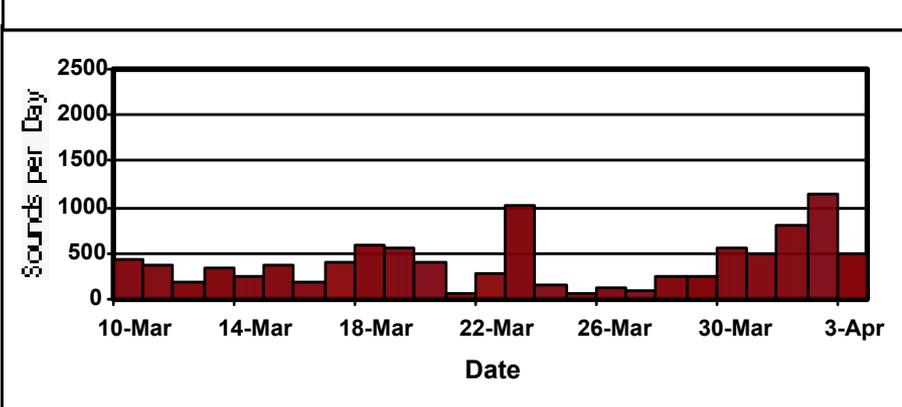
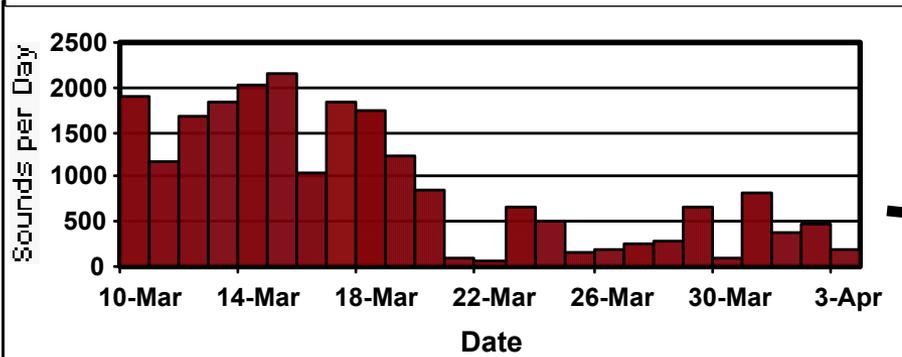
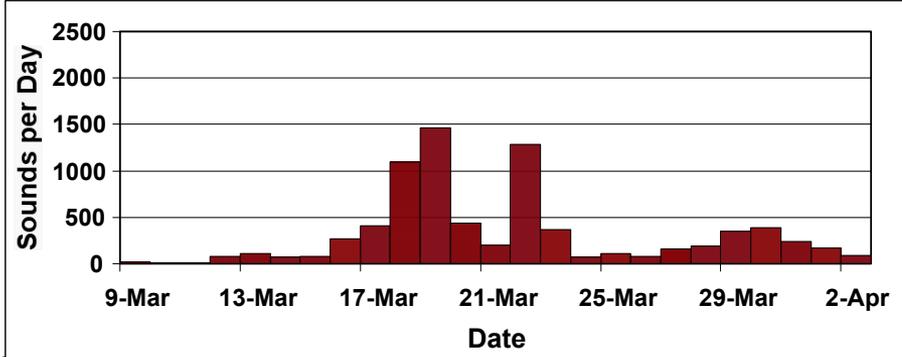


Cornell Bioacoustics' engineers design and build customized systems to solve special problems

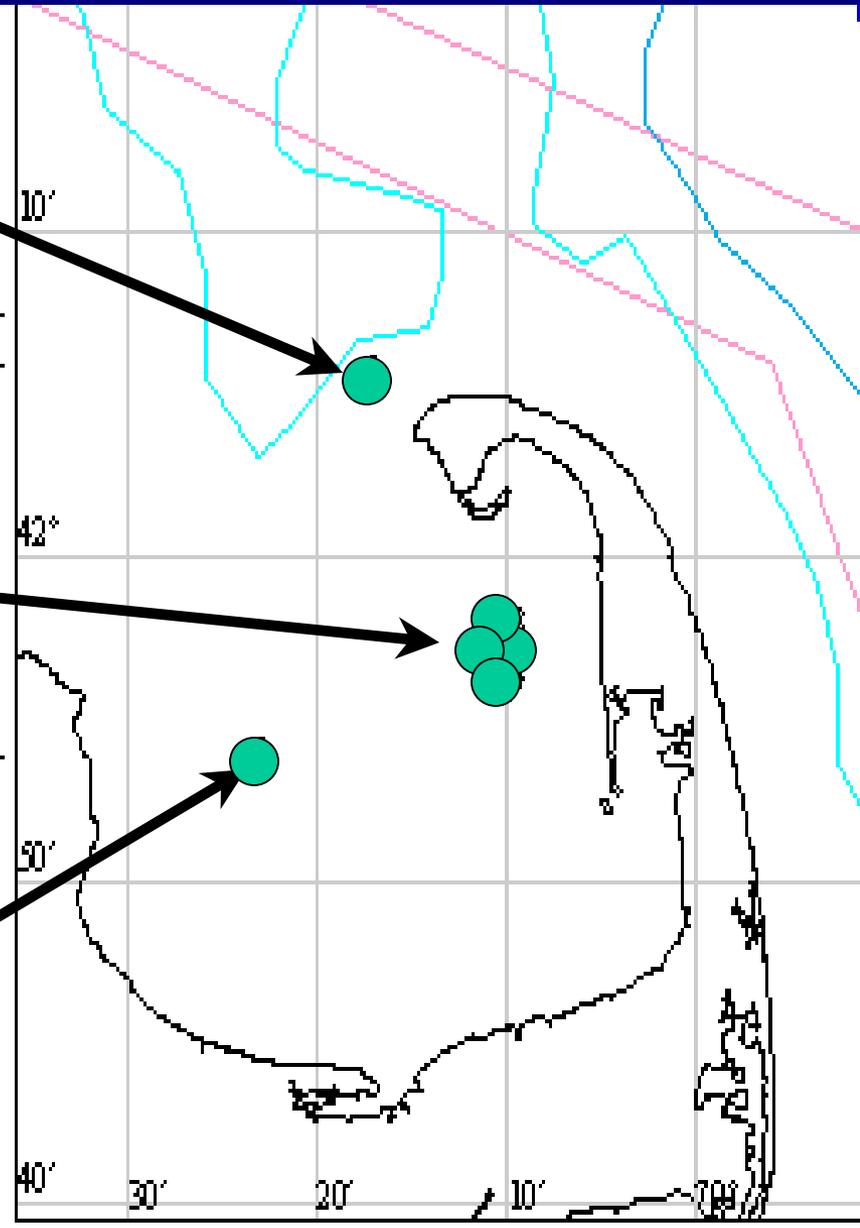
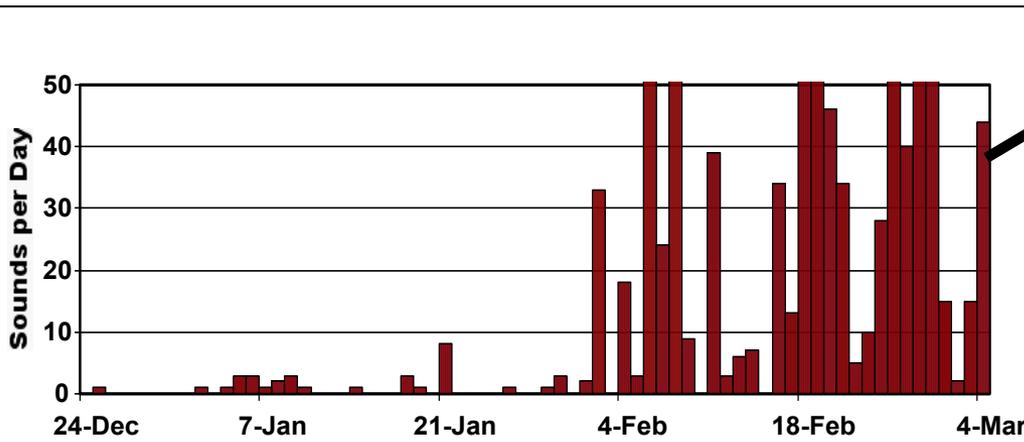
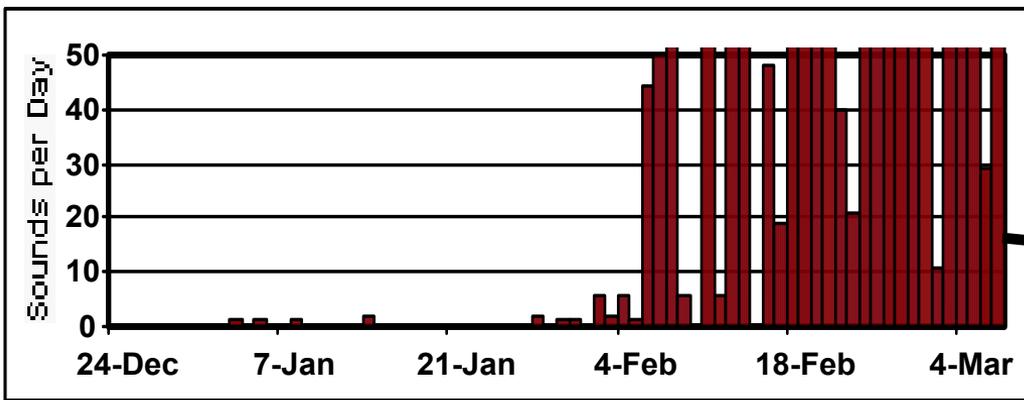
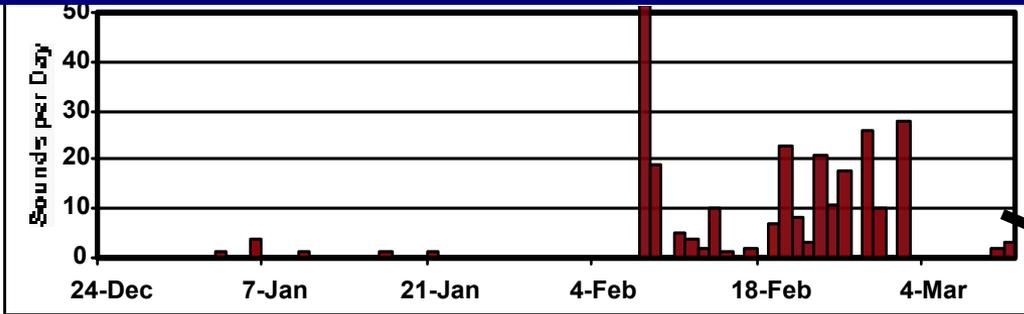
Cornell collaborates with CCS, GoMOOS and IFAW to acoustically detect and determine the seasonal distribution and relative abundance of right whales throughout their habitat.



Some pop-up detection results from Cape Cod Bay in 2001



Some pop-up detection results from Cape Cod Bay in 2002



Summary

Right Whale Acoustic Detection Research

- There were dramatic differences between numbers and distributions based on acoustic detections for 2001 and 2002. These differences were similar to those documented by aerial surveys and were probably related to food availability.
- Passive acoustic monitoring is a realistic mechanism to reliably detect whales and to estimate distribution and relative **abundance**. [For example, whales were detected acoustically in very low numbers (1-3 animals) throughout January 2002 in Cape Cod Bay, but were not detected during aerial surveys during this period (e.g. first whale heard on 25 Dec. 2001, but first whale seen on 7 Feb. 2002).]
- Right whales are acoustically active throughout the year. Technology is under development (field installation fall 2002) to automatically detect right whales in real-time in a remote area with shoreside Web access (e.g. GoMOOS).